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(54) Terminal with memory management and method for handling acoustic samples

(57) A memory management terminal for handling recorded acoustic samples and generating an electronic representation of the acoustic sample for being represented in categories in a hierarchical memory structure, and including means in order to enable later retrieval of the acoustic samples, where the terminal has means for enabling each electronic representation of the acoustic sample to be assigned a category-label and that electronic representations with the same category-label can be played back together. The terminal includes: means for assigning each electronic representation of said

acoustic sample with a category-label, means for recording the electronic representation of the acoustic sample, means for storing each category-labelled group of electronic representations, means for retrieving the electronic representations with a certain category-label, playback means and means for organising the electronic representations.

The claimed invention also includes a method for handling recorded acoustic samples and generating an electronic representation of the acoustic sample in order to enable later retrieval of the electronic representations.

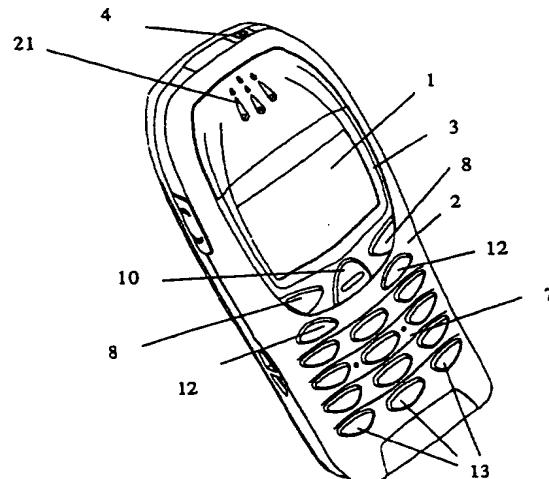


Fig. 1

Description

[0001] The invention relates to a memory management terminal for handling recorded acoustic samples and a method for handling recorded acoustic samples in a memory management terminal. The recorded acoustic samples can be e.g. voice memos used for recording short memos to be played back on a later occasion.

[0002] Voice recorders in general are earlier known like in US 5 914 941, where a portable storage/playback apparatus is shown having means for recording audio programming digitally, storing memos and playing back the stored audio programming.

[0003] Motorola has in its new Tri-band phone L7089 something they call VoiceNotes, where notes could be recorded during normal calls, conference calls and standby. Up to 3 minutes of message could be recorded and every VoiceNote gets an individual tag.

[0004] Philips made a handheld PC, Velo 1, a couple of years ago, which could record voice memos. The voice memos could subsequently be moved as common files to different directories in order to be categorised.

[0005] An object of the invention is to provide a method of handling recorded acoustic samples, which enables an easy and quick retrieval of recorded memos.

[0006] According to claimed invention this objective is obtained by a method where a user can with use of a memory management terminal record an acoustic sample. The user can assign each acoustic sample with a label or category-label, a priority, a sorting criteria and a name. The method includes those acoustic samples with the same label or category-label can be represented on the display of a memory management terminal and can be re-sorted, played back or deleted. The handling of the recorded acoustic samples can be done by just using a keyboard of the memory management terminal, but also partly by using the voice commands.

[0007] An object of the invention is to provide a memory management terminal with a voice recorder of handling recorded acoustic samples, which enables an easy and quick retrieval of recorded acoustic samples.

[0008] According to the invention a memory management terminal obtains this objective having a voice recorder, where acoustic samples will be assigned a label or category-label and a sorting criteria after recording, and that acoustic samples with the same label or category-label are stored together in a hierarchical memory. It also includes that the acoustic samples with the same category-label can be represented on the display of the memory management terminal and that they can be re-sorted, played back or deleted. The handling of the acoustic samples can be done by just using the keyboard of the memory management terminal, but also partly by using the voice commands.

[0009] The invention will be explained more fully below, by way of example, in connection with preferred embodiments and with reference to the drawing, in which:

Fig. 1 shows in a perspective view a preferred embodiment of the memory management terminal according to the invention.

Fig. 2 schematically shows the essential parts of a telephone for communication with a cellular network.

Fig. 3 shows an idle mode display for the phone.

Fig. 4a shows a flow chart of the handling for recording memos according to the invention.

Fig. 4b shows different windows of the phone display in the voice memo function according to the invention.

Fig. 4c shows different windows of the phone display in the voice recording function according to the invention.

Fig. 5a shows a flow chart of the handling for sorting memos according to the invention.

Fig. 5b shows different windows of the phone display in the sorting function according to the invention.

Fig. 6a shows a flow chart of the handling for playback of the memos according to the invention.

Fig. 6b shows different windows of the phone display in the playback function according to the invention.

Fig. 7a shows a flow chart of the handling for changing settings of the voice recorder function according to the invention.

Fig. 7b shows different windows of the phone display in the settings function according to the invention.

Fig. 7c shows different windows of the phone display in the settings function according to the invention.

Fig. 8 illustrates the basic structure of the list of memos listed on the display sorted after priority and date.

[0010] According to a first aspect the memory management terminal according to the invention will be described with reference to a hand portable phone, preferably a cellular/mobile phone. A preferred embodiment of this phone is shown in fig. 1, where a phone is shown in perspective. As will be seen, the phone is provided with a front cover 2 having a window frame 3 encircling

the protective window of the display assembly 1. The phone comprises a user interface having an on/off button 4, a keyboard/keypad 7, a battery, a display/LCD 1, an ear-piece 21 and a microphone.

[0011] The keypad 7 has a first group of keys 13 as alphanumeric keys, by means of which the user can enter a telephone number, write a text message (SMS), write a name (associated with the phone number), etc. Each of the twelve alphanumeric keys 13 is provided with a figure "0-9" or a sign "#" or "", respectively. In alpha mode each key is associated with a number of letters and special signs used in the text editing.

[0012] The keypad 2 additionally comprises two soft keys 8, two call handling keys 12, and a navigation key 10. The functionality of the soft key depends on the state of the phone and the navigation in the menu by using a navigation key. The present functionality of the soft keys 8 is shown in separate fields in the display 1 just above the keys 8. The two call handling keys 12 are used for establishing a call or a conference call, terminating a call or rejecting an incoming call.

[0013] The navigation key 10 is an up/down key and is placed centrally on the front surface of the phone between the display 3 and the group of alphanumeric keys 8. Hereby the user will be able to control this key with his thumb. This is the best site to place an input key requiring precise motor movements. Many experienced phone users are used to one-hand handling. They place the phone in the hand between the fingertips and the palm of the hand. Hereby the thumb is free for inputting information.

[0014] Fig. 2 schematically shows the most important parts of a preferred embodiment of the phone, said parts being essential to the understanding of the invention. The microphone 22 records the user's speech, and the analogue signals formed thereby are A/D converted in an A/D converter (not shown) before the speech is encoded in an audio part 20. The encoded speech signal is transferred to the controller 18 (physical layer processor), which e.g. supports the GSM terminal software. The controller 18 also forms the interface to the peripheral units of the apparatus, including RAM and ROM memories 17a and 17b, a SIM card 16, the display 1 and the keypad 7 (from fig. 1) as well as data, power supply, etc. The controller 18 communicates with the transmitter/receiver circuit 19. The audio part 20 speech-decodes the signal, which is transferred from the controller 18 to the ear-piece 21 via a D/A converter (not shown).

[0015] The preferred embodiment of the phone of the invention is adapted for use in connection with the GSM network, but, of course, the invention may also be applied in connection with other phone networks. It could be cellular networks, various forms of cordless phone systems or in dual band phones accessing sets of these systems/networks.

[0016] The controller 18 is connected to the user interface. Thus, it is the controller 18, which monitors the activity in the phone and controls the display 1 in re-

sponse thereto.

[0017] Therefore, it is the controller 18, which detects the occurrence of a state change event and changes the state of the phone and thus the display text. The user 5 may cause a state change event, when he activates the keypad 7 including the navigation key or keys 10, and these type of events are called entry events or user events. However, the network communicating with the phone may also cause a state change event. These type 10 of events and other events beyond the user's control are called non-user events. Non user events comprise status change during call set-up, change in battery voltage, change in antenna conditions, message on reception of SMS, etc.

[0018] The invention will be described with reference 15 to figs. 3 to 8 showing the various features and steps of handling of acoustic samples. In the description the invention will be exemplified with voice memos as acoustic samples, where the acoustic samples are converted 20 to an electronic representation of the acoustic samples. This electronic representation is a MIDI-file, MP3-file or any other similar file-type for an electronic representation of an acoustic sample. There will also be acoustic samples recorded used as voice tags for labels or category-labels, which are also naturally converted to 25 MIDI-files or similar.

[0019] The starting point is that the phone is in idle mode, which means that the phone is turned on and ready to be used for any possible operation. An idle 30 mode display 30 for the phone 1 is shown in fig. 3, which includes two bars indicating the signal strength 31 and the battery level 32. Furthermore there is a time indication 33, an identification 34 of the operator to which the phone is presently connected, and two labels 35 indicating the present functionality (Menu: access to the 35 Menu structure; Names: access to the Phone book) of the two soft keys 8.

[0020] In idle mode the user can with a voice command, "Memo" start the voice memo function. The voice 40 memo function can also be selected with menu selection by pressing the left soft key 8 "Menu" (shown in fig. 3) and scroll down with the navigation keys 10 until display 1 indicates "Voice Memo", like in display 40 in fig. 4b. This display will include a header 41 indicating the mode 45 of the display, "Voice Memo". By pressing the left soft key 8, "Select", once more when the display 40 "Voice Memo" is shown, the voice memo-function is activated, and display 42, indicating "Record" is shown. If instead "Exit", which is also indicated in the display is executed 50 by pressing the right soft key 8, the phone is brought back to idle mode (idle mode display 30), fig. 3.

[0021] With the voice command the phone will automatically change to the display 42, shown in fig. 4b, which is the "Record"-display. This display will include 55 a header 43 indicating the mode of the display, "Record". This display also indicates with the two labels 35 the present functionality of the two soft keys 8. The function "Start", which starts the function in the present

display (42, 45, 46 or 47), is executed if pressing the left soft key 8. By pressing the up/down navigation key 10 the other possible functions; "Sorting" (display 45), "Playback" (display 46) and "Settings" (display 47), will be accessible and shown on the display instead of "Record". The display also indicates "Back", which is executed by the right soft key 8 and will bring the phone back to "Voice Memo" mode (Voice Memo mode display 40).

[0022] When the user selects the "Select" operation from the "Record" display either by pressing the left soft key 8 or using a voice command "Record", "Recording" display 50 will appear. The phone prepares recording of a voice memo, step 200 in fig. 4a, thereafter starts the recording of a voice memo, step 201, and simultaneously an electronic representation of the voice memo is created. Display 50 includes a header 51, "Recording", and the label 35 indicates the present functionality of the left soft key 8. By pressing the left "Stop" soft key 8 the user has a possibility to stop the present recording. If the left "Stop" is pressed and the recording, step 201, is stopped, step 213, jumps the phone to display 52. While recording, step 201, the processor 18 will check, step 202, if there is a pause in the recording, which is longer than five seconds. If there is a pause longer than five seconds the recording is stopped, step 203, otherwise the recording continues. If the recording is stopped, step 203, a display 52 will appear with a header 53 "Do you want to save the recorded memo".

[0023] In display 52 the user is asked to decide if he/she wants to save the recorded memo or not, step 204. There could always be a need to redo the recording once more. The display 52 also includes the two labels 35, which indicates the present functionality (Yes: Initiate saving of the memo; No: ignore the memo recorded and jump back to display 42) of the two soft keys 8. When pressing the right "No" soft key 8 the recorded memo will be erased, step 205, and the phone is brought back, step 206, to display 42. In display 42 a new memo can be recorded or one of the other functions, "Sorting", "Playback" or "Settings" can be displayed and selected by scrolling between displays 42, 45, 46 and 47 with the navigation keys 10. By pressing the left "Yes" soft key 8, the processor 18 checks if the memory has available space for the memo or not, step 207. If the memory is full a display 54 appears showing a header, "The memory is full. Do you want to replace the oldest recorded memo with this new memo?" and the two labels 35. The label 35 indicates the present functionality (Yes: Erase the oldest recorded memo; No: ignore the memo recorded and jump back to display 42) of the two soft keys 8. When pressing the right "No" soft key 8, step 215, the recorded memo will be erased, step 216, and the phone is brought back, step 206, to the "Record"-display 42, where a new memo can be recorded or one of the other functions, "Sorting", "Playback" or "Settings" can be displayed by scrolling between displays 42, 45, 46 and 47 with the navigation keys 10. By pressing the left "Yes"

soft key 8, step 214, in display 54 the oldest recorded memo is erased, step 208, and the processor 18 checks again if there is enough space in the memory for memo, step 207. If there is not enough space the display 54 will

5 appear again and this process will continue until there is enough space to save the memo.

[0024] After the processor has checked the memory, step 207, and finally finds out that there is enough space to save the memo, a display 56 will appear having a

10 header 57 saying, "Do you want to select category-label?". Display 56 also includes the two labels 35, which indicates the present functionality (Yes: Initiate selection of category-label; No: assign the memo a default category-label) of the two soft keys 8. When pressing the

15 right "No" soft key 8 the recorded memo will be assigned a default category-label, "default", step 209. How this default category-label is defined will be described in connection with the description of the setting function. If the user instead presses the left "Yes" soft key 8, a

20 display 60 will appear indicating a list 61 with the different possible/available category-labels. The display 60 appears to be of another size compared with previous shown displays, but this is not the case. However is the list 61 of category-labels can be longer than the available

25 space in display 60, so just to show the whole list 61 this display 60 is shown including the whole list 61. The user of the phone uses the navigation keys 10 to scroll up or down to see the whole list 61. This display 60 also includes the two labels 35, which indicates the present

30 functionality (Select: The highlighted category-label is selected; Back: jump back to the previous menu level) of the two soft keys 8. By pressing the right "Back" soft key 8 it returns to the previous display 56. In the list 61 a category-label 64 will be highlighted to indicate, which

35 category-label that will be assigned to the recorded memo by pressing the left "Select" soft key 8, step 209. Selection can also be made with voice command. The user just says the name of the category-label and the processor 18 will compare the said category-label with

40 the saved voice tags for each category-label, whereafter the selected category-label will be assigned to the memo. How the voice tag is connected to the category-label will be explained later when describing how to amend the list of category-labels.

45 **[0025]** After the selection of category-labels is executed, display 63 appears including a header 64 "Enter name of the memo:" and a text field 65. In the text field 65 letters may be entered using the alphanumeric keys 13. The labels 35 indicate the present functionality (OK:

50 Finished entering the name, continue to next menu; Back/Erase: Erase the last entered letter or if no letters have entered jumps the phone to a previous display) of the two soft keys 8. A cursor 66 in the text field 65 indicates the position of the next letter to be entered. The

55 navigation keys 10 control the position of the cursor 66, and scroll the cursor 66 left or right in the text field 65. When pressing the right "Erase" soft key 8 the last entered letter in the text field 65 will be erased or if the

cursor 66 is placed in any other place the letter placed left of the cursor 66 will be erased. If no letters have been entered in the text field 65 the right label 35 will indicate "Back" instead of "Erase", and the phone jumps back to display 124 if the right "Back" soft key 8 is pressed. By pressing the left "OK" soft key 8 the memo will be named, step 210, the name that has been entered in the text field 65.

[0026] After the naming, step 210, a display 70 appears having a header 71, "Do you want to assign a priority to the memo?". This display also includes the two labels 35 indicating the present functionality (Yes: jump to next menu to assign a preferred priority to the memo; No: assign a default priority to the memo) of the two soft keys 8. When pressing the right "No" soft key 8 the memo will be assigned a default priority, "Priority 3", step 211. Date/time and duration of the memo will be automatically attached to memo and saved together with the memo, step 212. The record function is thereby ended, step 206, and the phone is brought back to display 42, where a new memo can be recorded or one of the other functions, "Sorting", "Playback" or "Settings" can be displayed by scrolling between displays 42, 45, 46 and 47 with the navigation keys 10.

[0027] If instead the left "Yes" soft key 8 is pressed in display 70, a display 72 will appear indicating a list 73 with the different possible priorities ("Priority 1", "Priority 2", "Priority 3", "Priority 4" and "Priority 5"). Naturally, there could be another number of priorities or another way of showing the priority, e.g. "Priority A", "Priority B", "Priority C", etc. Display 72 also includes the two labels 35, which indicates the present functionality (Select: The memo will be assigned the selected priority; Back: jump back to the previous menu level) of the two soft keys 8. The user of the phone uses the navigation keys 10 to scroll up or down in the list 73 to select the desired priority. By pressing the right "Back" soft key 8 it returns to the previous display 70. In the list 73 a priority 74 is highlighted to indicate, which priority that will be assigned to the recorded memo by pressing the left "Select" soft key 8, step 211. After the memo has been assigned a priority, step 211, time and duration of the memo will be automatically attached to memo and saved together with the memo, step 212. The record function is thereby ended, step 206, and the phone jumps back to display 42, where a new memo can be recorded or one of the other functions, "Sorting", "Playback" or "Settings" can be displayed by scrolling between displays 42, 45, 46 and 47 with the navigation keys 10. In display 63 a voice command "READY" can also be used quit naming the memo and giving it a priority, step 211, and instead automatically save time and duration of the memo together with the memo in the memory, step 212, whereafter the recording is ended, step 206, like described above.

[0028] The sorting feature shown in fig 5a and 5b will now be described in more detail showing an embodiment of the invention. When the user selects the "Start"

operation, step 220, from the "Sorting" display 45, either by pressing the left "Start" soft key 8 or using a voice command "Sorting", display 81 will appear and the phone prepares sorting of memos by displaying a list 82 of the different category-labels. The list 82 includes the different possible category-labels ("General", "ToDo", "Private", "Urgent" and "Draft", etc.). Display 81 also includes the two labels 35 indicating the present functionality, (Select: The memos with the selected category-label assigned will be sorted; Back: jump back to the previous menu level) of the two soft keys 8. The user of the phone uses the navigation keys 10 to scroll up or down in the list 82. By pressing the right "Back" soft key 8 it returns the phone to the previous display 45. In the list 82 a category-label 83 is highlighted to indicate, which category-label will be selected by pressing the left "Select" soft key 8, step 221. When the left "Select" soft key 8 is pressed, the processor 18 will retrieve all memos with that category-label 83. A display 84 will appear

including a list 85 with all those memos, step 222. The default order of the list 85 is that the newest recorded memo is at the top of the list 85.

[0029] In display 84, the display is also indicated with the two labels 35 the present functionality, (Options: jumping a selection menu for further sorting of the memos; Back: jump back to the previous menu level) of the two soft keys 8. The user of the phone uses the navigation keys 10 to scroll up or down in the list 85. By pressing the right "Back" soft key 8 it returns to the previous display 81. In the list 85 a memo 86 is highlighted to indicate, which memo will be selected by pressing the left "Options" soft key 8. If the left "Options" soft key 8 is pressed a display 87 will appear indicating a list 88 with the different available options of how to handle the list or the highlighted memo 86. The available options are as shown in display 87: "Sort by Date", "Sort by Priority" and "Erase", step 223-225. Naturally, there could be other options like e.g. "Play" or "Rename". The user of the phone uses the navigation keys 10 to scroll up or down in the list 88 in order to select the required feature.

[0030] The features "Sort by Date" and "Sort by Priority", which are shown in the list 88, affects all the memos shown in display 84. The memos in the list 88 are affected in that the individual place of the each memo in the list can be changed according to any of the sorting criteria, "Sorting by Date" or "Sorting by Priority". A sorted list 91 is shown in display 90. The different options in display 87 are selected with the two soft keys 8. When the right "Back" soft key 8 is pressed it jumps the phone to the previous display 84, and a new choice is available. Also indicated with two labels 35 in display 87 is the present functionality of the soft keys 8. If the left "Select" soft key 8 is pressed the processor 18 executes the selected option, step 223, 224 or 225 (in this display they are: "Sorting by Date", "Sorting by Priority" or "Erase") indicated with highlighted option 89. A display 90 appears, step 226, where a sorted list 91 shown with the memos sorted according to the selected option 89. If the option

"Erase", step 223, was selected the corresponding erased memo will not appear in the list 91 after executed sorting. In display 90 is also indicated with the two labels 35 the present functionality, (Options: jumping to the selection menu for further sorting of the memos; Back: jump back to the previous menu level, display 81) of the two soft keys 8. When the right "Back" soft key 8 is pressed the phone jumps to the display 81 and another category-label can be selected from the list 82 to be sorted or if the right "Back" soft key 8 in display 81 is pressed again the phone jumps to display 45, step 227. In this display the different options "Record", "Sorting", "Playback" and "Settings" are available by scrolling between displays 42, 45, 46 and 47 with the navigation keys 10. If the left "Select" soft key 8 is pressed in display 84, display 87 will appear and further sorting of the memos with the present category-label is possible.

[0031] The displays 81, 84 and 90 appear to be of another size compared with previous shown displays, but this is not the case. However the lists 82, 85 and 91 of category-labels and memos could be longer than the available space in displays. To enhance the understanding displays 81, 84 and 90 are shown here including the whole lists 82, 85 and 91, and thereby have the displays 81, 84 and 90 are not the actual size.

[0032] The playback feature shown in fig 6a and 6b will now be described in more detail showing an embodiment of the invention. When the user selects the "Start" operation, step 230, from the "Playback", display 46, either by pressing the left "Start" soft key 8 or using a voice command "Playback", display 101 will appear, step 231. The phone prepares playback of memos, step 230, display 101 indicates a list 102 with the different possible category-labels ("General", "ToDo", "Private", "Urgent" and "Draft", etc.). This display also include the two labels 35 indicating the present functionality, (Select: Selects the category-label from which memos to be played back and a list with all the memos with that category-label will be displayed; Back: jump back to the previous menu level) of the two soft keys 8. The user of the phone uses the navigation keys 10 to scroll up or down in the list 102. By pressing the right "Back" soft key 8 it returns to the previous display 46 and the playback function is ended, step 241, where a new memo can be recorded or one of the other functions, "Record", "Sorting" or "Settings" can be displayed by scrolling between displays 42, 45, 46 and 47 with the navigation keys 10.

[0033] In the list 102 a category-label 103 is highlighted to indicate, which category-label will be selected by pressing the left "Select" soft key 8, step 232. When the left "Select" soft key 8 is pressed, the processor 18 will retrieve all memos with that highlighted category-label 103 and a list 105 with all those memos will appear in a display 104, step 234. The first memo in list 105 will automatically start to be played back, step 233. Normally the first memo in the list 105 is the oldest memo, but if the list of memos have been sorted in the sorting function the list could have another order. If there are not

any memos assigned with the selected category-label 103 the phone will return to display 101.

[0034] In display 104, the display is indicated with two labels 35 the present functionality, (Options: A selection menu will appear with different options; Back: jump back to a previous menu level) of the two soft keys 8. The user of the phone uses the navigation keys 10 to scroll up or down in the list 105. By pressing the right "Back" soft key 8 the phone stops the playback and jumps to display 101, step 240. In the list 105 a memo 106 is highlighted to indicate, which memo will be selected by pressing the left "Options" soft key 8. If the left "Options" soft key 8 is pressed a display 107 will appear, step 241, indicating with a list 108 the different available options of how to handle the selected memo 106 or other options, step 241. The available options are as shown in display 107: "Play" (Step 235), "Stop play" (Step 236), "Next" (Step 237), "Previous" (Step 238) and "Erase" (239). Naturally, there could be other options. The user of the phone uses the navigation keys 10 to scroll up or down in the list 108 in order to select the required feature. Before the selection is made the earlier played back memo will still play if the phone has not finished the playback of that memo. When playback of a memo has been finished and no selection has been made in the display 107 or if the left "Options" soft key 8 has not been pressed in display 104, the phone will start to play the next memo in the list 105. If it was the last memo that was played the phone will jump to display 101.

[0035] The selections in display 107 are made by pressing the left "Select" soft key 8, and the highlighted option will be executed (Step 235-239). By pressing the right "Back" soft key 8 instead the playback will be stopped, step 236, and the phone jumps back to display 101.

[0036] If the feature 109, "Play", is selected, step 235, the phone will stop playing the present memo, step 243, and start to play the selected memo, step 233. A display 114 will appear, step 234, where selected memo 116, which is played back, is highlighted in a list 115. If the feature 110, "Stop play", is selected, step 236, the phone stop playing the present memo, step 243, and the display 101 will appear, step 231. When the feature 111, "Next", is selected, step 237, the phone will stop playing the present memo, step 243, and start to playback, step 233, the next memo in the list 105. The display 114 appears, step 234, indicating the played memo 116 in the list 115. If there are no more memos in the list 105 or 116 the phone will jump to display 231, step 244. When the feature 112, "Previous", is selected, step 238, the phone will stop playing the present memo, step 243, and start to playback, step 233, the previous memo in the list 105. The display 114 appears, step 234, indicating the played memo 116 in the list 115. If it was the first memo in the list 105 or 116 that was played back the phone jumps to display 231, step 244. When the feature 113, "Erase", is selected, step 239, the selected memo will be erased, step 242. The display 114 will appear,

step 234, where the memo, which was before the erased memo in list 104 is highlighted in the list 115. Display 114 has the same features like display 104, so that display 107 will appear if the left "Options" soft key 8 is pressed and the above options are available. If it was the last memo in the list 105 or 116 that was erased and that memo was played back when erased, step 242, the phone will jump to display 101, step 245.

[0037] The "Playback" function will continue until it is ended, step 240, which is done by pressing the right "Back" soft key 8 once or twice in display 101, 104, 107 and 114, and the phone jumps back to display 46. In the display the "Playback" function could be started again or one of the other functions, "Record", "Sorting" or "Settings" can be displayed, and later started, by scrolling between displays 42, 45, 46 and 47 with the navigation keys 10.

[0038] The user can also after having used the voice command "Playback" to start the playback function continue to use voice commands. As earlier described the phone will show a display 101, after having used the voice command "Playback", and that display 101 includes a list 102 with the different possible category-labels to be played back. The user can easily choose one of the category-labels to playback by saying the name of the required category-label. The phone will then jump to display 104 and start to playback the first voice memo on the list 105. After the first memo has been played back the phone will continue with the next memo on the list 105, and continue to take next memo on the list 105 when an earlier memo is finished. The playback of the memos will continue until all the memos have been played back or stopped earlier with the soft keys 8 as earlier described. If all memos are played back without interrupting them the phone will, after having finished the playing back of the last memo, jump to display 101, where a new selection of category-label can be made.

[0039] The displays 101, 104 and 113 appear to be of another size compared with previously shown displays, but this is not the case. However the lists 102, 105 and 115 of category-labels respectively memos could be longer than the available space in displays. To enhance the understanding displays 101, 104 and 113 are shown here including the whole lists 102, 105 and 115, and thereby have the displays 101, 104 and 113 are not the actual size.

[0040] In display 104 and 114 memos that have not been played back can be indicated so that the user can distinguish the memos played back from the memos not played back. This can be done by having the non-played back indicated in Italics (not shown in fig.). After the memo has been played back the name of the memo will change from italic to normal style.

[0041] The setting feature shown in fig 7a, 7b and 7c will now be described in more detail showing an embodiment of the invention. When the user selects the "Start" operation, step 250, from the "Settings" display 120, either by pressing the left "Start" soft key 8 or using a voice

command "Settings", the phone prepares changing the settings and display 121 will appear, step 251. Display 121 indicates a list 122 with the different available category-labels ("General", "ToDo", "Private", "Urgent" and "Draft", etc.). This display also includes the two labels 35 indicating the present functionality, (Options: A selection menu will appear with different options; Back: jump back to the previous menu level) of the two soft keys 8. The user of the phone uses the navigation keys

- 5 10 to scroll up or down in the list 122. By pressing the right "Back" soft key 8 it returns to the previous display 120, step 276. In display 120 the "Settings" function could be started again or one of the other functions, "Record", "Sorting" or "Playback" can be displayed, and
- 10 15 later started, by scrolling up and down in this display with the navigation keys 10.

In the list 122 a category-label 123 is highlighted to indicate, which category-label will be selected by pressing the left "Options" soft key 8. When the left "Options" soft key 8 is pressed, a display 124 will appear showing a list 125, step 252, with different options ("Add entry", "Add voice tag", "Set as default", "Rename" and "Erase") to handle the selected category-label or execute other settings. Naturally, there could be other options than those in the list 125, like "Set default priority", "Playback voice tag" or "Set voice commands". This embodiment is however only exemplified with the options present in list 125. The user of the phone uses the navigation keys 10 to scroll up or down in the list 125 in order to select the required option or feature.

- 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105 110 115 120 125 130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335 340 345 350 355 360 365 370 375 380 385 390 395 400 405 410 415 420 425 430 435 440 445 450 455 460 465 470 475 480 485 490 495 500 505 510 515 520 525 530 535 540 545 550 555 560 565 570 575 580 585 590 595 600 605 610 615 620 625 630 635 640 645 650 655 660 665 670 675 680 685 690 695 700 705 710 715 720 725 730 735 740 745 750 755 760 765 770 775 780 785 790 795 800 805 810 815 820 825 830 835 840 845 850 855 860 865 870 875 880 885 890 895 900 905 910 915 920 925 930 935 940 945 950 955 960 965 970 975 980 985 990 995 1000 1005 1010 1015 1020 1025 1030 1035 1040 1045 1050 1055 1060 1065 1070 1075 1080 1085 1090 1095 1100 1105 1110 1115 1120 1125 1130 1135 1140 1145 1150 1155 1160 1165 1170 1175 1180 1185 1190 1195 1200 1205 1210 1215 1220 1225 1230 1235 1240 1245 1250 1255 1260 1265 1270 1275 1280 1285 1290 1295 1300 1305 1310 1315 1320 1325 1330 1335 1340 1345 1350 1355 1360 1365 1370 1375 1380 1385 1390 1395 1400 1405 1410 1415 1420 1425 1430 1435 1440 1445 1450 1455 1460 1465 1470 1475 1480 1485 1490 1495 1500 1505 1510 1515 1520 1525 1530 1535 1540 1545 1550 1555 1560 1565 1570 1575 1580 1585 1590 1595 1600 1605 1610 1615 1620 1625 1630 1635 1640 1645 1650 1655 1660 1665 1670 1675 1680 1685 1690 1695 1700 1705 1710 1715 1720 1725 1730 1735 1740 1745 1750 1755 1760 1765 1770 1775 1780 1785 1790 1795 1800 1805 1810 1815 1820 1825 1830 1835 1840 1845 1850 1855 1860 1865 1870 1875 1880 1885 1890 1895 1900 1905 1910 1915 1920 1925 1930 1935 1940 1945 1950 1955 1960 1965 1970 1975 1980 1985 1990 1995 2000 2005 2010 2015 2020 2025 2030 2035 2040 2045 2050 2055 2060 2065 2070 2075 2080 2085 2090 2095 2100 2105 2110 2115 2120 2125 2130 2135 2140 2145 2150 2155 2160 2165 2170 2175 2180 2185 2190 2195 2200 2205 2210 2215 2220 2225 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3230 3235 3240 3245 3250 3255 3260 3265 3270 3275 3280 3285 3290 3295 3300 3305 3310 3315 3320 3325 3330 3335 3340 3345 3350 3355 3360 3365 3370 3375 3380 3385 3390 3395 3400 3405 3410 3415 3420 3425 3430 3435 3440 3445 3450 3455 3460 3465 3470 3475 3480 3485 3490 3495 3500 3505 3510 3515 3520 3525 3530 3535 3540 3545 3550 3555 3560 3565 3570 3575 3580 3585 3590 3595 3600 3605 3610 3615 3620 3625 3630 3635 3640 3645 3650 3655 3660 3665 3670 3675 3680 3685 3690 3695 3700 3705 3710 3715 3720 3725 3730 3735 3740 3745 3750 3755 3760 3765 3770 3775 3780 3785 3790 3795 3800 3805 3810 3815 3820 3825 3830 3835 3840 3845 3850 3855 3860 3865 3870 3875 3880 3885 3890 3895 3900 3905 3910 3915 3920 3925 3930 3935 3940 3945 3950 3955 3960 3965 3970 3975 3980 3985 3990 3995 4000 4005 4010 4015 4020 4025 4030 4035 4040 4045 4050 4055 4060 4065 4070 4075 4080 4085 4090 4095 4100 4105 4110 4115 4120 4125 4130 4135 4140 4145 4150 4155 4160 4165 4170 4175 4180 4185 4190 4195 4200 4205 4210 4215 4220 4225 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5230 5235 5240 5245 5250 5255 5260 5265 5270 5275 5280 5285 5290 5295 5300 5305 5310 5315 5320 5325 5330 5335 5340 5345 5350 5355 5360 5365 5370 5375 5380 5385 5390 5395 5400 5405 5410 5415 5420 5425 5430 5435 5440 5445 5450 5455 5460 5465 5470 5475 5480 5485 5490 5495 5500 5505 5510 5515 5520 5525 5530 5535 5540 5545 5550 5555 5560 5565 5570 5575 5580 5585 5590 5595 5600 5605 5610 5615 5620 5625 5630 5635 5640 5645 5650 5655 5660 5665 5670 5675 5680 5685 5690 5695 5700 5705 5710 5715 5720 5725 5730 5735 5740 5745 5750 5755 5760 5765 5770 5775 5780 5785 5790 5795 5800 5805 5810 5815 5820 5825 5830 5835 5840 5845 5850 5855 5860 5865 5870 5875 5880 5885 5890 5895 5900 5905 5910 5915 5920 5925 5930 5935 5940 5945 5950 5955 5960 5965 5970 5975 5980 5985 5990 5995 6000 6005 6010 6015 6020 6025 6030 6035 6040 6045 6050 6055 6060 6065 6070 6075 6080 6085 6090 6095 6100 6105 6110 6115 6120 6125 6130 6135 6140 6145 6150 6155 6160 6165 6170 6175 6180 6185 6190 6195 6200 6205 6210 6215 6220 6225 6230 6235 6240 6245 6250 6255 6260 6265 6270 6275 6280 6285 6290 6295 6300 6305 6310 6315 6320 6325 6330 6335 6340 6345 6350 6355 6360 6365 6370 6375 6380 6385 6390 6395 6400 6405 6410 6415 6420 6425 6430 6435 6440 6445 6450 6455 6460 6465 6470 6475 6480 6485 6490 6495 6500 6505 6510 6515 6520 6525 6530 6535 6540 6545 6550 6555 6560 6565 6570 6575 6580 6585 6590 6595 6600 6605 6610 6615 6620 6625 6630 6635 6640 6645 6650 6655 6660 6665 6670 6675 6680 6685 6690 6695 6700 6705 6710 6715 6720 6725 6730 6735 6740 6745 6750 6755 6760 6765 6770 6775 6780 6785 6790 6795 6800 6805 6810 6815 6820 6825 6830 6835 6840 6845 6850 6855 6860 6865 6870 6875 6880 6885 6890 6895 6900 6905 6910 6915 6920 6925 6930 6935 6940 6945 6950 6955 6960 6965 6970 6975 6980 6985 6990 6995 7000 7005 7010 7015 7020 7025 7030 7035 7040 7045 7050 7055 7060 7065 7070 7075 7080 7085 7090 7095 7100 7105 7110 7115 7120 7125 7130 7135 7140 7145 7150 7155 7160 7165 7170 7175 7180 7185 7190 7195 7200 7205 7210 7215 7220 7225 7230 7235 7240 7245 7250 7255 7260 7265 7270 7275 7280 7285 7290 7295 7300 7305 7310 7315 7320 7325 7330 7335 7340 7345 7350 7355 7360 7365 7370 7375 7380 7385 7390 7395 7400 7405 7410 7415 7420 7425 7430 7435 7440 7445 7450 7455 7460 7465 7470 7475 7480 7485 7490 7495 7500 7505 7510 7515 7520 7525 7530 7535 7540 7545 7550 7555 7560 7565 7570 7575 7580 7585 7590 7595 7600 7605 7610 7615 7620 7625 7630 7635 7640 7645 7650 7655 7660 7665 7670 7675 7680 7685 7690 7695 7700 7705 7710 7715 7720 7725 7730 7735 7740 7745 7750 7755 7760 7765 7770 7775 7780 7785 7790 7795 7800 7805 7810 7815 7820 7825 7830 7835 7840 7845 7850 7855 7860 7865 7870 7875 7880 7885 7890 7895 7900 7905 7910 7915 7920 7925 7930 7935 7940 7945 7950 7955 7960 7965 7970 7975 7980 7985 7990 7995 8000 8005 8010 8015 8020 8025 8030 8035 8040 8045 8050 8055 8060 8065 8070 8075 8080 8085 8090 8095 8100 8105 8110 8115 8120 8125 8130 8135 8140 8145 8150 8155 8160 8165 8170 8175 8180 8185 8190 8195 8200 8205 8210 8215 8220 8225 8230 8235 8240 8245 8250 8255 8260 8265 8270 8275 8280 8285 8290 8295 8300 8305 8310 8315 8320 8325 8330 8335 8340 8345 8350 8355 8360 8365 8370 8375 8380 8385 8390 8395 8400 8405 8410 8415 8420 8425 8430 8435 8440 8445 8450 8455 8460 8465 8470 8475 8480 8485 8490 8495 8500 8505 8510 8515 8520 8525 8530 8535 8540 8545 8550 8555 8560 8565 8570 8575 8580 8585 8590 8595 8600 8605 8610 8615 8620 8625 8630 8635 8640 8645 8650 8655 8660 8665 8670 8675 8680 8685 8690 8695 8700 8705 8710 8715 8720 8725 8730 8735 8740 8745 8750 8755 8760 8765 8770 8775 8780 8785 8790 8795 8800 8805 8810 8815 8820 8825 8830 8835 8840 8845 8850 8855 8860 8865 8870 8875 8880 8885 8890 8895 8900 8905 8910 8915 8920 8925 8930 8935 8940 8945 8950 8955 8960 8965 8970 8975 8980 8985 8990 8995 9000 9005 9010 9015 9020 9025 9030 9035 9040 9045 9050 9055 9060 9065 9070 9075 9080 9085 9090 9095 9100 9105 9110 9115 9120 9125 9130 9135 9140 9145 9150 9155 9160 9165 9170 9175 9180 9185 9190 9195 9200 9205 9210 9215 9220 9225 9230 9235 9240 9245 9250 9255 9260 9265 9270 9275 9280 9285 9290 9295 9300 9305 9310 9315 9320 9325 9330 9335 9340 9345 9350 9355 9360 9365 9370 9375 9380 9385 9390 9395 9400 9405 9410 9415 9420 9425 9430 9435 9440 9445 9450 9455 9460 9465 9470 9475 9480 9485 9490 9495 9500 9505 9510 9515 9520 9525 9530 9535 9540 9545 9550 9555 9560 9565 9570 9575 9580 9585 9590 9595 9600 9605 9610 9615 9620 9625 9630 9635 9640 9645 9650 9655 9660 9665 9670 9675 9680 9685 9690 9695 9700 9705 9710 9715 9720 9725 9730 9735 9740 9745 9750 9755 9760 9765 9770 9775 9780 9785 9790 9795 9800 9805 9810 9815 9820 9825 9830 9835 9840 9845 9850 9855 9860 9865 9870 9875 9880 9885 9890 9895 9900 9905 9910 9915 9920 9925 9930

ed to indicate, which category-label will be erased by pressing the left "Erase" soft key 8, step 262. If the left "Erase" soft key 8 is pressed a display 136 will appear indicating with a header 137 "Do you want to transfer the memos assigned with the erased category-label?", step 264. Any voice tag connected to that category-label is automatically erased, step 263. The display 136 also includes the two labels 35, which indicates the present functionality (Yes: A list of all remaining category-labels appears; No: All memos with that category-label are erased.) of the two soft keys 8. By pressing the right "No" soft key 8 all memos with the category-label selected in display 133 are erased whereafter the phone jumps to the display 138, step 267. If the left "Yes" soft key 8 are pressed a display 141 will appear with a list 142 of all remaining category-labels, step 265.

[0045] By scrolling up and down the list 142 with the navigation keys 10 it is possible to select, step 266, which category-label should be attached to the memos that have no category-label. This due to that the one category-label that previously has been attached to the memos has been erased in order to make space for a new category-label. In display 141 is also indicated with label 35 the present functionality of the soft key 8. "Select" will assign the highlighted category-label 143 to the memos and thereafter will display 138 appear, and "Back" will bring the phone to the previous display 136.

[0046] The display 138 includes a header 139 "Enter name:" and a text field 140 into which letters may be entered by the alphanumeric keys 13. The label 35 indicates the present functionality (OK: Finished entering the name, continue to next menu; Erase: Erase the last entered letter; Back: the phone jumps back to the previous display) of the two soft keys 8. A cursor 144 in the text field 140 indicates the position of the next letter to be entered. The navigation keys 10 control the position of the cursor 144. When pressing the right "Erase" soft key 8 the last entered letter in the text field 140 will be erased or if the cursor 144 is placed in any other place the letter placed left of the cursor 144 will be erased. If no letters have been entered in the text field 140 the right label 35 indicates "Back" instead of "Erase", and the phone jumps back to display 124 if the right "Back" soft key 8 is pressed. By pressing the left "OK" soft key 8 the category-label will be named, step 274, that is entered in the text field 140. Thereafter display 145 will appear including a header 146, "Record Voice Tag", and label 35 indicating present functionality of the two soft key 8. "Start" will start recording a voice tag, step 275 that will be attached to the category-label entered in display 138. After recording the voice tag the setting feature stops and the phone jumps to display 120, step 276.

[0047] If the processor 18 after having selected "Add category-label" in display 124, step 253, finds out that there is a free category-label, step 258, display 138 will appear, which includes a header 139, "Enter name:", and a text field 140 into which letters may be entered by the alphanumeric keys 13. The label 35 indicates the

present functionality of the two soft keys 8. A cursor 144 in the text field 140 indicates the position of the next letter to be entered. The navigation keys 10 control the position of the cursor 144. When pressing the right "Erase" soft key 8 the last entered letter in the text field 140 will be erased or if the cursor 144 is placed in any other place the letter placed to the left of the cursor 144 will be erased. If no letters have been entered in the text field 140 the right label 35 indicates "Back" instead of

5 "Erase", and the phone jumps back to display 124 if the right "Back" soft key 8 is pressed. By pressing the left "OK" soft key 8 the category-label will be named, step 274, that is entered in the text field 140. Thereafter will display 145 appear including a header 146, "Record 10 Voice Tag", and label 35 indicating present functionality of the two soft key 8. "Start" will start recording a voice tag, step 275, which will be attached to the category-label entered in display 138. After recording the voice tag the setting feature stops and the phone jumps to display 120, step 276.

[0048] If the left "Yes" soft key 8 is pressed in display 131, step 277, (The user wants to rename an already existing category-label) a display 147 will appear with a list 148 including all the user-defined category-labels, 25 step 268. It also includes the two labels 35, which indicates the present functionality of the two soft keys 8 in display 147. By pressing the right "Back" soft key 8 the phone jumps back to the display 131. If the left "Select" soft key 8 is pressed the phone selects the highlighted 30 user-defined category-label 149 to be renamed. After the category-label to be renamed has been selected, step 269, display 136 will appear, step 270. The display 136 indicates with a header 137 "Do you want to transfer the memos assigned with the erased category-label?", 35 step 270. Any voice tag attached to that category-label is automatically erased, step 263. The display 136 also includes the two labels 35, which indicates the present functionality (Yes: A list of all remaining category-labels appears; No: All memos with that category-label are erased.) of the two soft keys 8. By pressing the right "No" soft key 8 all memos with the category-label selected in display 133 are erased, step 271, whereafter the phone jumps to the display 138, step 274. If the left "Yes" soft key 8 is pressed a display 141 will appear with a list 40 142 of all remaining category-labels, step 272.

[0049] By scrolling up and down the list 142 with the navigation keys 10 is possible to select, step 273, which category-label should be attached to the memos that have no category-label. This due to that the one category-label that has previously been attached to the memos is going to be renamed. In display 141 is also indicated with label 35 the present functionality of the soft key 8. "Select" will assign the highlighted category-label 143 to the memos and thereafter display 138 will appear, step 274, and "Back" will bring the phone to the previous display 136.

[0050] The display 138 includes a header 139 "Enter name:" and a text field 140 into which letters may be

entered using the alphanumeric keys 13. The label 35 indicates the present functionality (OK: Finish d entering the name, continu to next menu; Back/Erase: Erase the last entered letter or if no letters have b en entered jumps back to a previous display) of th two soft keys 8. A cursor 144 in the text field 140 indicates the position of the next letter to be entered. The navigation keys 10 control the position of the cursor 144. When pressing the right "Erase" soft key 8 the last entered letter in the text field 140 will be erased or if the cursor 144 is placed in any other place the letter placed left of the cursor 144 will be erased. If no letters have been entered in the text field 140 the right label 35 indicates "Back" instead of "Erase", and the phone jumps back to display 147 if the right "Back" soft key 8 is pressed. By pressing the left "OK" soft key 8 the category-label will be named, step 274, that is entered in the text field 140. Thereafter display 145 will appear including a header 146, "Record Voice Tag", and label 35 indicating present functionality of the two soft key 8. "Start" will start recording a voice tag, step 275 that will be attached to the category-label entered in display 138. After recording the voice tag the setting feature stops and the phone jumps to display 120, step 276.

[0051] If the feature 127, "Add voice tag", is selected in display 124, step 254, the processor 18 will prepare recording a voice tag. Display 145 will appear including a header 146, "Record Voice Tag", and label 35 indicating present functionality of the two soft key 8. "Start" will start recording a voice tag, step 261 that will be attached to the category-label entered in display 138, and simultaneously an electronic representation of the voice tag will be created actually is that attached to the category-label entered in display 138. After recording the voice tag the setting feature stops and the phone jumps to display 120, step 276.

[0052] If the feature 128, "Set as default", is selected in display, step 255, the processor 18 will prepare to store a category-label that will be the default category-label. This means the category-label that will be assigned to the memo if the right "No" soft key is pressed in display 56, step 209. It is the category-label 123 selected in display 121, step 251, prior to the selection of the options in display 124 that is selected to be the default category-label. After the phone has saved category-label 123 as default category-label the phone returns to display 120, step 276.

[0053] If a free category-label should be selected as default category-label, and later be erased one of the pre-defined category-labels, e.g. "General" will automatically be selected as default category-label. The same goes if no category has been selected, when a pre-defined category-label, e.g. "General", acts as default category-label.

[0054] If the f ature 129, "Rename", is s lected in display 124, step 256, display 152 will appear indicating a list 153 with th pr sent user-defined category-labels, step 268. The display also includes the two labels 35

indicating the present functionality of the two soft keys 8. If the right "Back" soft key 8 is pressed the phone will jump back to display 124. If the left "Rename" soft key 8 is pressed the highlighted category-label 154 is selected to be renamed, step 269. The highlighted category-label 154 could be selected from the list 153 by scrolling up and down the list 153 with the navigation keys 10.

5 [0055] After the category-label to be renamed has been selected, step 269, display 136 will appear, step 270. The display 136 indicates with a header 137 "Do you want to transfer the memos assigned with the erased category-label?", step 270. Any voice tag attached to that category-label is automatically erased, step 263. The display 136 also includes the two labels 15 35, which indicates the present functionality (Yes: A list of all remaining category-labels appears; No: All memos with that category-label are erased.) of the two soft keys 8. By pressing the right "No" soft key 8 all memos with the category-label selected in display 152 are erased, 20 step 271, whereafter the phone jumps to the display 138, step 274. If the left "Yes" soft key 8 is pressed a display 157 will appear with a list 158 of all remaining category-labels, step 272.

25 [0056] By scrolling up and down the list 142 with the navigation keys 10 is possible to select, step 273, which category-label should be attached to the memos that have no category-label. This due to that the one category-label that previously has been attached to the memos is going to be renamed. In display 157 is also indicated with label 35 the present functionality of th soft key 8. "Select" will assign the highlighted category-label 159 to the memos and thereafter will display 138 appear, step 274, and "Back" will bring the phone to the previous display 136.

35 [0057] The display 138 includes a header 139 "Enter name:" and a text field 140 into which letters may be entered using the alphanumeric keys 13. The label 35 indicates the present functionality of the two soft keys 8. A cursor 144 in the text field 140 indicates the position of the next letter to be entered. The navigation keys 10 control the position of the cursor 144. When pressing the right "Erase" soft key 8 the last entered letter in the text field 140 will be erased or if the cursor 144 is placed in any other place the letter placed to the left of the cursor 144 will be erased. If no letters have been entered in the text field 140 the right label 35 indicates "Back" instead of "Erase", and the phone jumps back to display 152 if the right "Back" soft key 8 is pressed. By pressing the left "OK" soft key 8 the category-label will be renamed, step 274, to that entered in the text field 140. Thereafter display 145 will appear including a header 146, "Record Voice Tag", and label 35 indicating present functionality of the two soft key 8. "Start" will start recording a voice tag, step 275 that will be attached to th category-label ent red in display 138. If the right "Back" soft key 8 is pressed the phone will jump back to display 138 to enable entering of a new nam of the category-label. Any voice tag attached to previous category-label

is automatically erased. After that the setting feature stops and the phone jumps to display 120, step 276.

[0058] Th displays 121, 141 and 157 appear to be of another size compared with previous shown displays, but this is not the case. However the lists 122, 142 and 158 of category-labels and memos could be longer than the available space in displays. To enhance the understanding are displays 121, 141 and 157 are shown here including the whole lists 122, 142 and 158, and thereby the displays 121, 141 and 157 are not the actual size.

[0059] When the feature 130, "erase", is selected in display, step 257, display 133 will appear, step 261, indicating a list 134 with the present user-defined category-labels. The display also includes the two labels 35 indicating the present functionality of the two soft keys 8. If the right "Back" soft key 8 is pressed the phone will jump back to display 124. If the left "Erase" soft key 8 is pressed the highlighted category-label 135 will be erased, step 262. The highlighted category-label 135 could be selected from the list 134 by scrolling up and down the list 134 with the navigation keys 10. Any voice tag attached to that category-label is automatically erased, step 263.

[0060] If the left "Erase" soft key 8 is pressed a display 136 will appear indicating with a header 137 "Do you want to transfer the memos assigned with the erased category-label?", step 264. The display 136 also includes the two labels 35, which indicates the present functionality (Yes: A list of all remaining category-labels appears; No: All memos assigned with that category-label are erased.) of the two soft keys 8. By pressing the right "No" soft key 8 all memos with the category-label selected in display 133 are erased whereafter the settings function ends and the phone jumps to the display 120, step 276.

[0061] If the left "Yes" soft key 8 is pressed a display 141 will appear with a list 142 of all remaining category-labels, step 265. By scrolling up and down the list 142 with the navigation keys 10 it is possible to select, step 266, which category-label should be attached to the memos that have no category-label. In display 141 is also indicated with label 35 the present functionality of the soft key 8. If the left "Select" soft key 8 is pressed, the highlighted category-label 143 will be assigned, step 266, to the memos whereafter the settings function ends and the phone jumps to the display 120, step 276. If the right "Back" soft key 8 is pressed the phone will jump back to display 136.

[0062] The voice memos are principally stored as generated electronic representations in a RAM as shown in fig. 8, where each stored unit includes an identifying code 300, a date of recording 301, length of recording 302, name of the memo 303, priority 304, and a pointer 305 to where in the memory the data has been stored. When sorting the memo only the pointer information will be changed. The same principle is valid for the storing of the category-labels and their voice tags. Another way of viewing the memory structure is to see

it as a hierachic structure, where the category-labels are main levels and the voice memos are organised under the category-label to which they have been assigned.

5 [0063] The invention is not limited to the above described or to the drawings showing examples of an embodiment, but can be varied within the scope of the appended claims.

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Claims

1. A method for handling recorded acoustic samples for being represented in categories in a hierachical memory structure and including the steps of:
 - recording an acoustic sample and generating an electronic representation of said acoustic sample,
 - assigning a label of each electronic representation of said acoustic sample, said label includes a category in said memory structure and a name for said electronic representation of said acoustic sample,
 - representing the name of said electronic representation of said acoustic sample under the assigned category in said memory structure,
 - playback said electronic representation of said acoustic sample from a selected category in said memory structure.
2. A method for handling recorded acoustic samples according to claim 1, wherein said acoustic sample includes voice memos.
3. A method for handling recorded acoustic samples according to claim 1, wherein said assigning of a label to each electronic representation of said acoustic sample includes the following steps:
 - assigning each electronic representation of said acoustic sample a default or user-defined category in said memory structure,
 - assigning a name for said electronic representation of said acoustic sample,
 - assigning a sorting criteria, and
 - assigning date, time and duration of record to the electronic representation of said acoustic sample
4. A method for handling recorded acoustic samples according to claim 1, wherein said representing the name of said electronic representation of said acoustic sample includes displaying said electronic representation under the assigned category in said memory structure.
5. A method for handling recorded acoustic samples

according to claim 4, wherein the displaying of the electronic representation of said acoustic sample in said memory structure includes a hierarchy of said categories names enable retrieval of electronic representation assigned with a certain category label.

6. A method for handling recorded acoustic samples according to claim 1, wherein said electronic representation of said acoustic sample is assigned a label including a category in said memory structure and a name for said electronic representation of said acoustic sample, coincident with said recording of said acoustic sample and generation of an electronic representation of said acoustic sample.
7. A method for handling recorded acoustic samples according to claim 1, wherein said electronic representation of said acoustic sample can be retrieved in said memory structure and that said electronic representation of said acoustic sample can be played back.
8. A method for handling recorded acoustic samples according to claim 7, wherein the displaying of the electronic representation of said acoustic sample includes an indication of whether said acoustic sample has been played back or not.
9. A method for handling recorded acoustic samples according to claim 1, wherein said electronic representation of said acoustic sample assigned to one label or category-label can be transferred to another label or category-label in the memory structure, renamed or deleted, and that a label or category-label can be added to the memory structure, renamed or deleted.
10. A method for handling recorded acoustic samples according to claim 9, wherein said label or category-label can be a default label or category-label or user-defined label or category-label.
11. A method for handling recorded acoustic samples according to claim 1, wherein displaying of the electronic representations assigned to one label or category-label can be altered by changing sorting criteria of the electronic representations, change of the name of the electronic representations, deleting some of the electronic representations or transferring electronic representations to another label or category-label in the memory structure.
12. A memory management terminal for handling recorded acoustic samples for being represented in categories in a hierarchical memory structure, and including:
 - recording means for recording an acoustic

sample and generating an electronic representation of said acoustic sample,

- inputting means for assigning a label of each electronic representation of said acoustic sample, said label includes a category in said memory structure and a name for said electronic representation of said acoustic sample, and
- outputting means for representing the name of said electronic representation of said acoustic sample under the assigned category in said memory structure and representing said electronic representation of said acoustic sample.

13. A memory management terminal for handling recorded acoustic samples according to claim 12, wherein the memory management terminal is mobile or cellular phone.

20 14. A memory management terminal for handling recorded acoustic samples according to claim 13, wherein said handled acoustic sample includes voice memos.

25 15. A memory management terminal for handling recorded acoustic samples according to claim 13, wherein said electronic representation could be a MIDI-file or any similar file-type for electronic representation of an acoustic sample.

30 16. A memory management terminal for handling recorded acoustic samples according to claim 13, wherein said inputting means for assigning of a label to each electronic representation of said acoustic sample includes the following steps:

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- assigning each electronic representation of said acoustic sample a default or user-defined category in said memory structure,
- assigning a name for said electronic representation of said acoustic sample,
- assigning a sorting criteria, and
- assigning date, time and duration of record to the electronic representation of said acoustic sample

50 17. A memory management terminal for handling recorded acoustic samples according to claim 15, wherein inputting means includes that said electronic representation is assigned a category in said memory structure and a name for said electronic representation of said acoustic sample, coincident with said recording of said acoustic sample and generation of an electronic representation of said acoustic sample.

18. A memory management terminal for handling recorded acoustic samples according to claim 13, wherein the outputting means for representing the

name of said electronic representation of said acoustic sample under the assigned category in said memory structure and representing said electronic representation of said acoustic sample includes displaying said name of said electronic representation in a display of said memory management terminal and playback the electronic representation of said acoustic sample. 5

19. A memory management terminal for handling recorded acoustic samples according to claim 17, wherein the outputting means includes that said electronic representation of said acoustic sample can be retrieved in said memory structure and that said electronic representation of said acoustic sample can be played back, and that the displaying of the electronic representation of said acoustic sample includes an indication of whether said acoustic sample has been played back or not. 10

20. A memory management terminal for handling recorded acoustic samples according to claim 17, wherein the outputting means includes said electronic representation of said acoustic sample assigned to one label or category-label can be transferred to another label or category-label in the memory structure, renamed or deleted, and that a label or category-label can be added to the memory structure, renamed or deleted, and that said label or category-label can be a default label or category-label or user-defined label, and that the displaying of the electronic representations assigned to one label or category-label can be altered by changing sorting criteria of the electronic representations, change of the name of the electronic representations, deleting some of the electronic representations or transferring electronic representations to another label or category-label in the memory structure. 15

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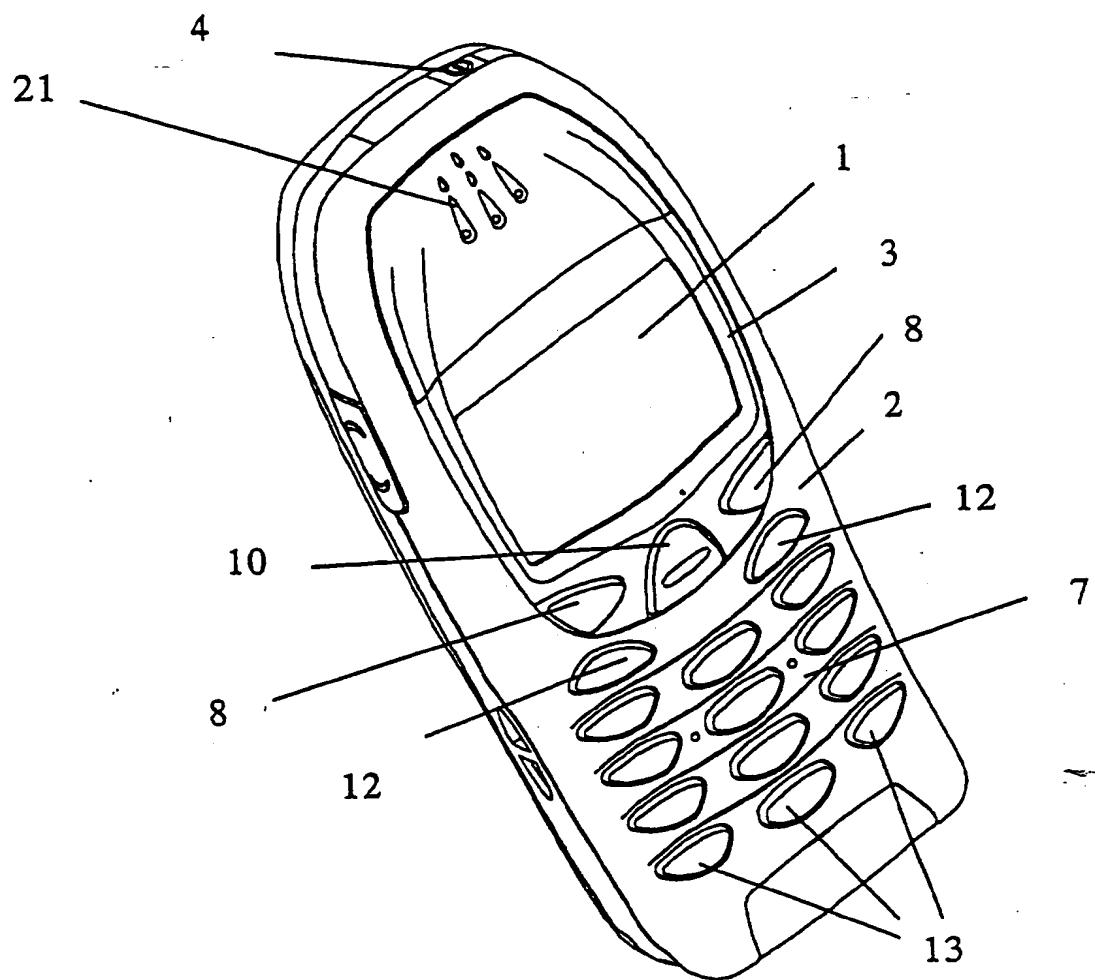


Fig. 1

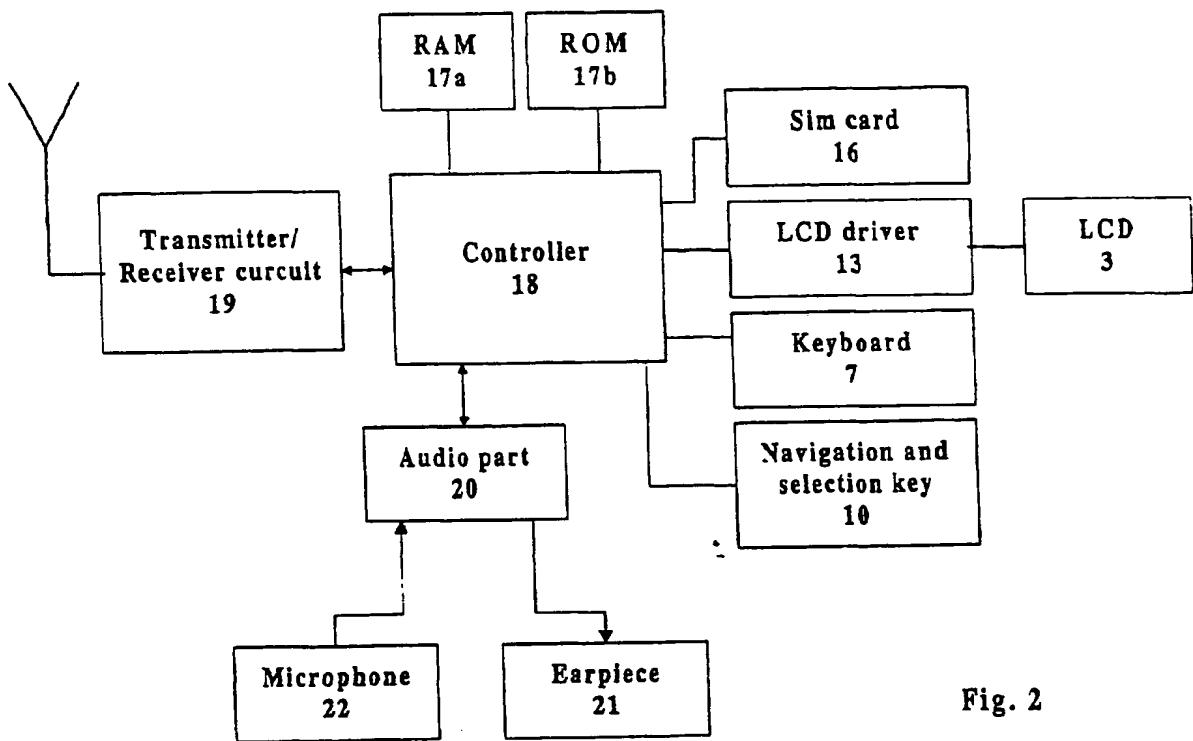


Fig. 2

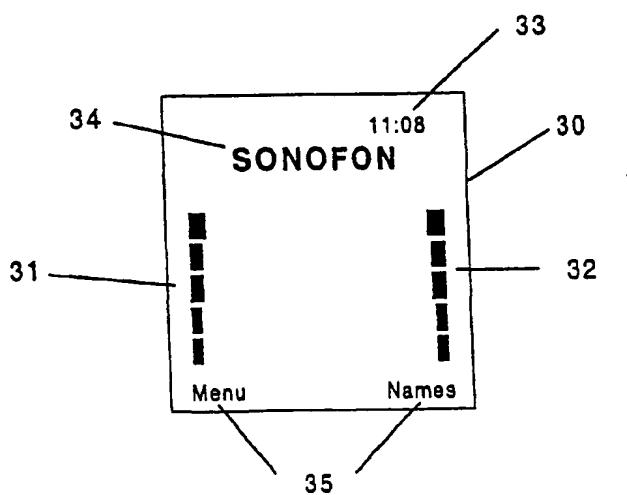


Fig. 3

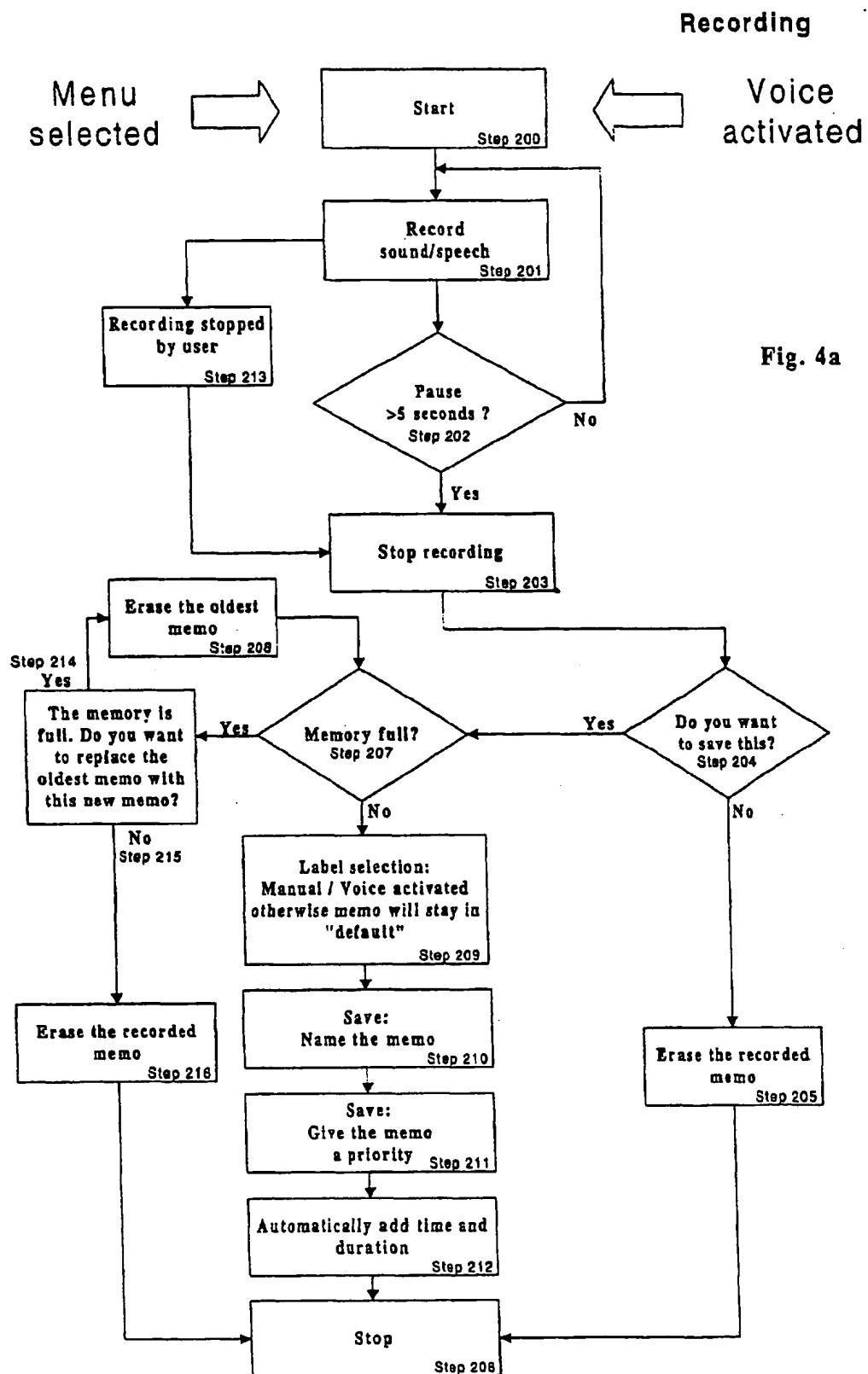


Fig. 4a

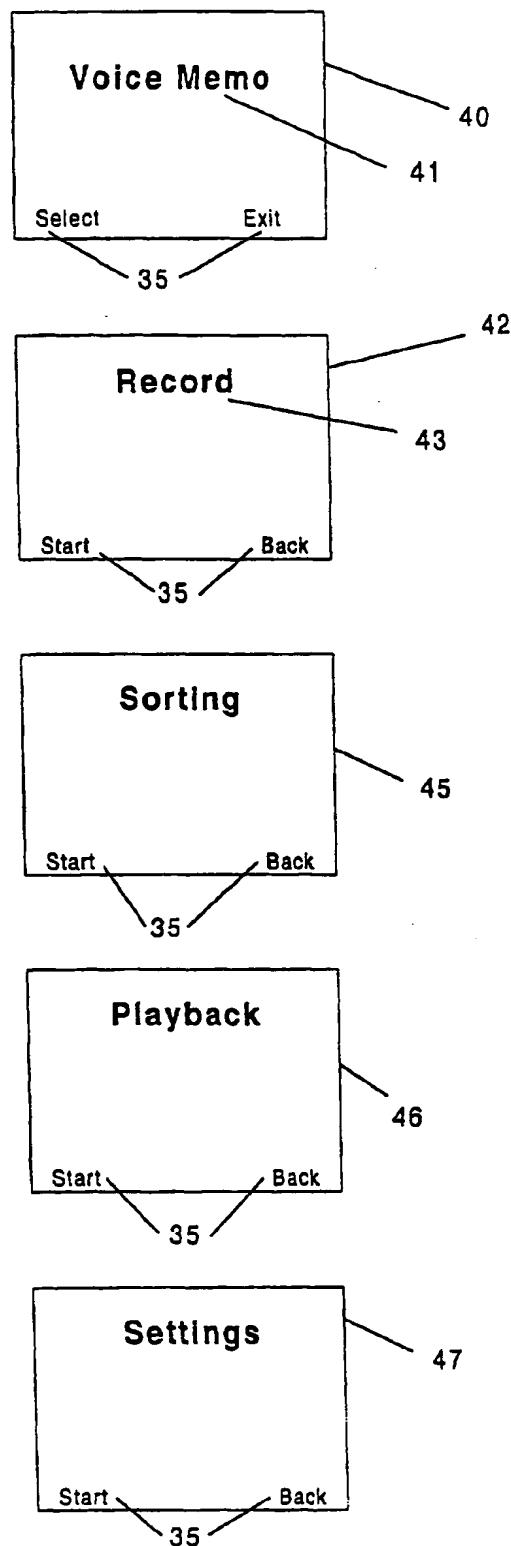


Fig. 4b

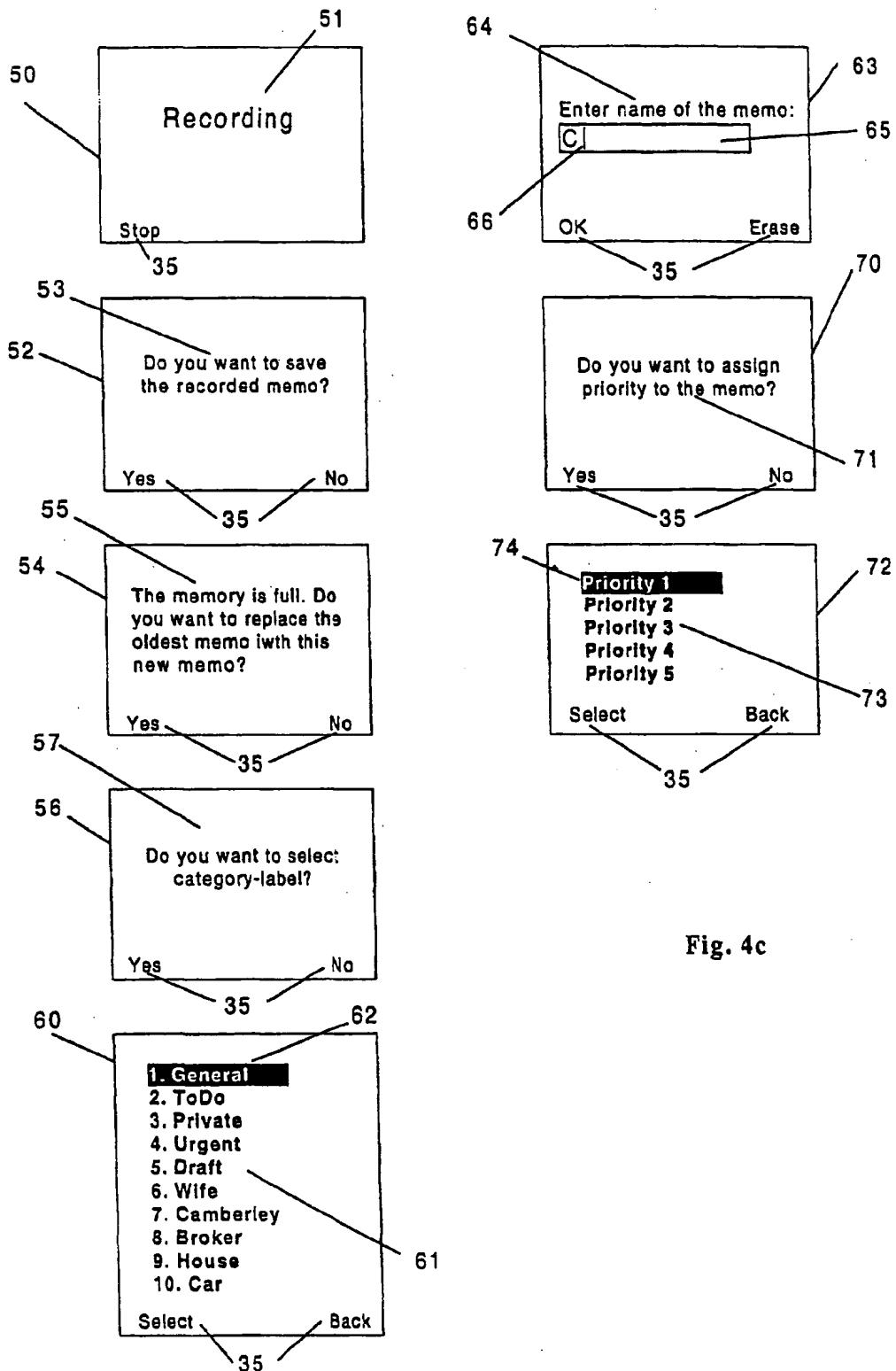


Fig. 4c

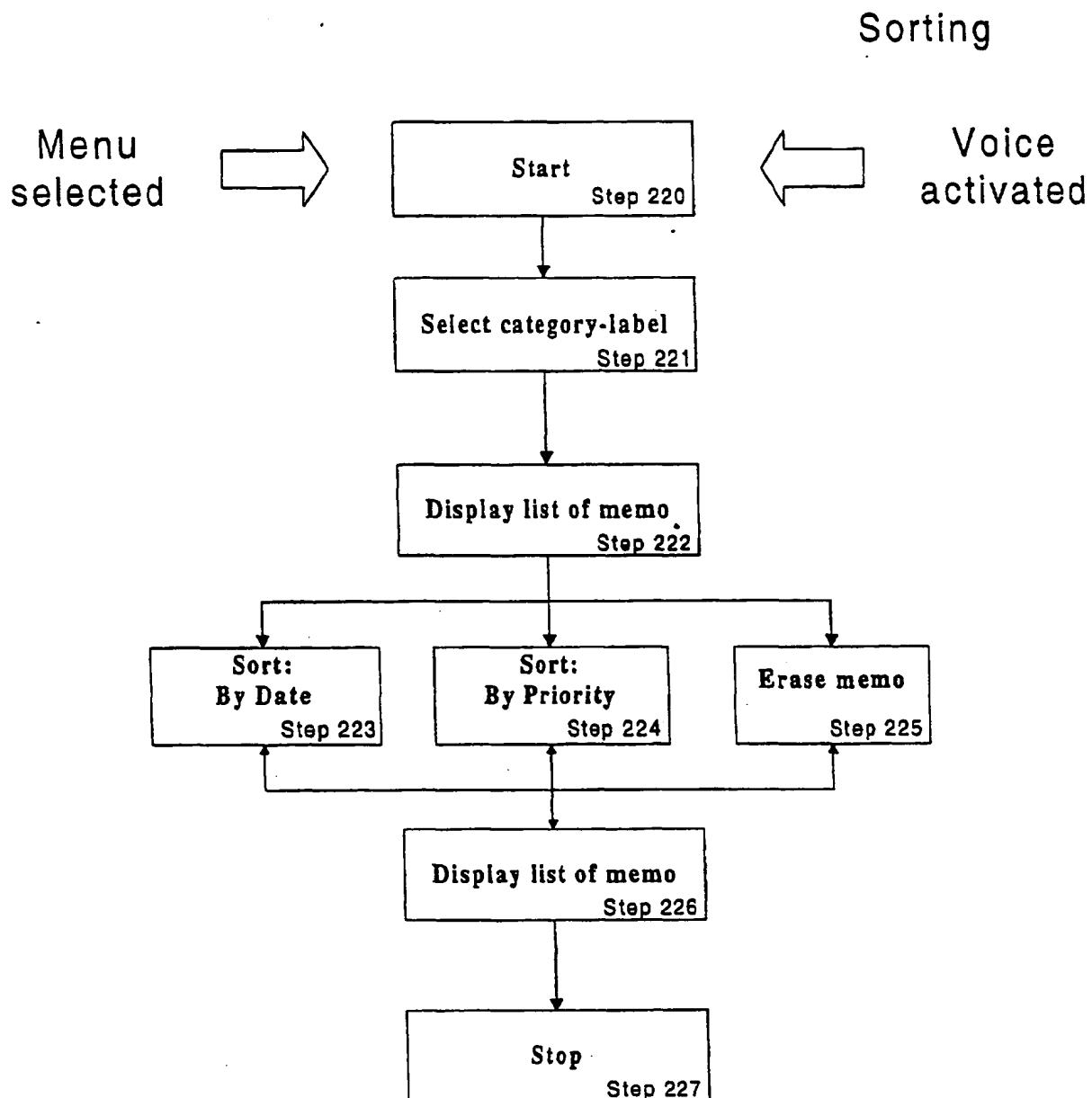


Fig. 5a

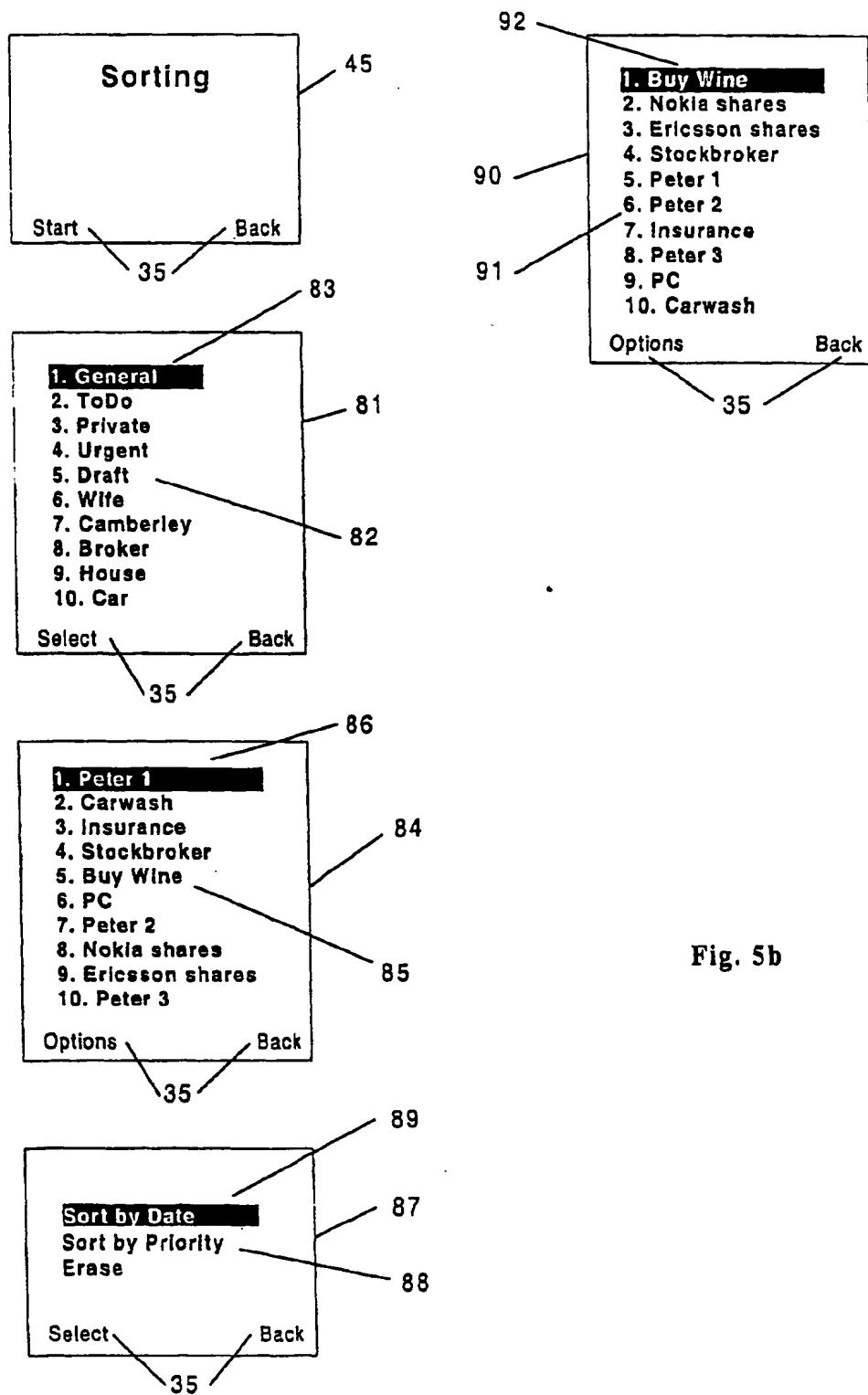


Fig. 5b

Playback

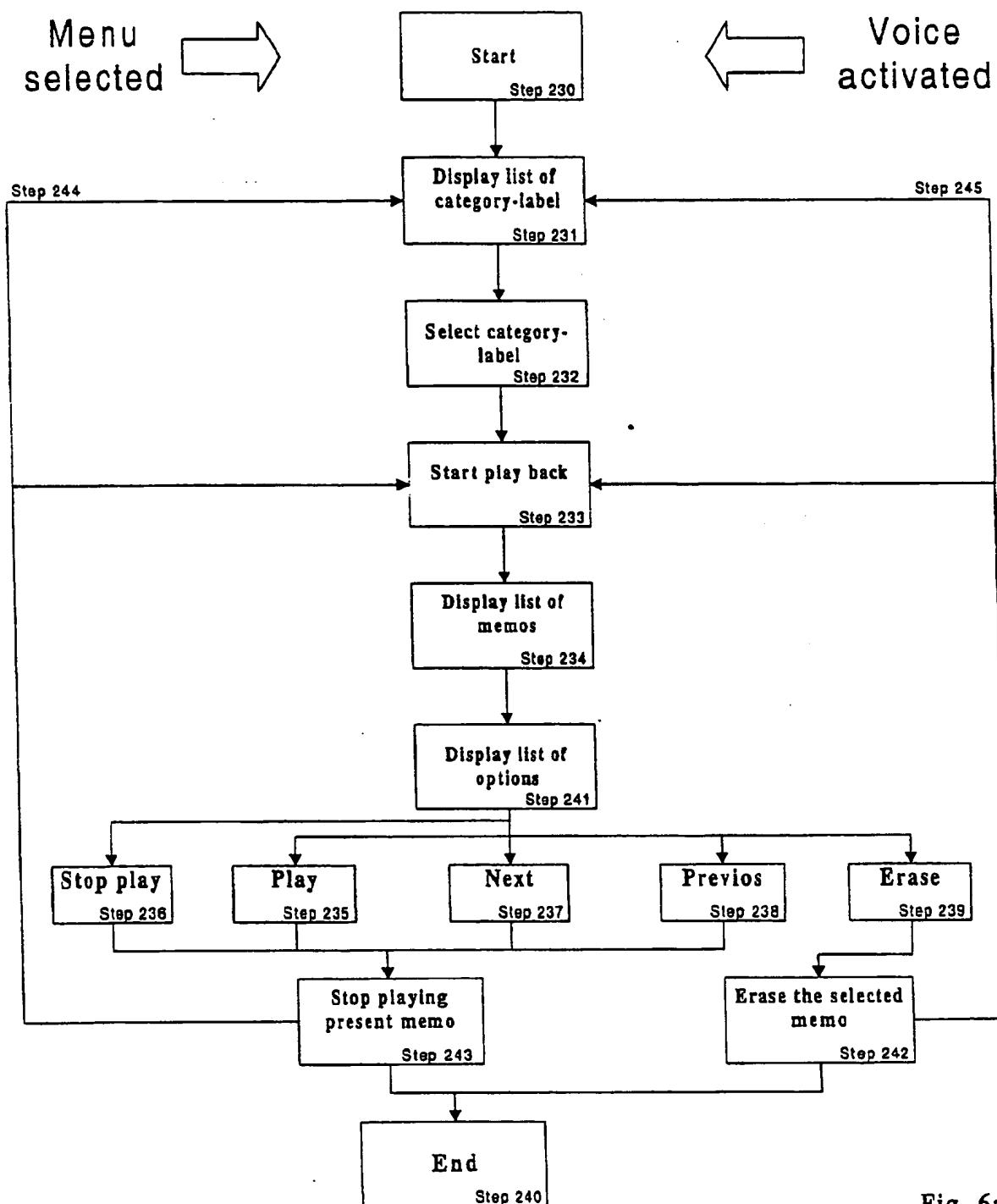


Fig. 6a

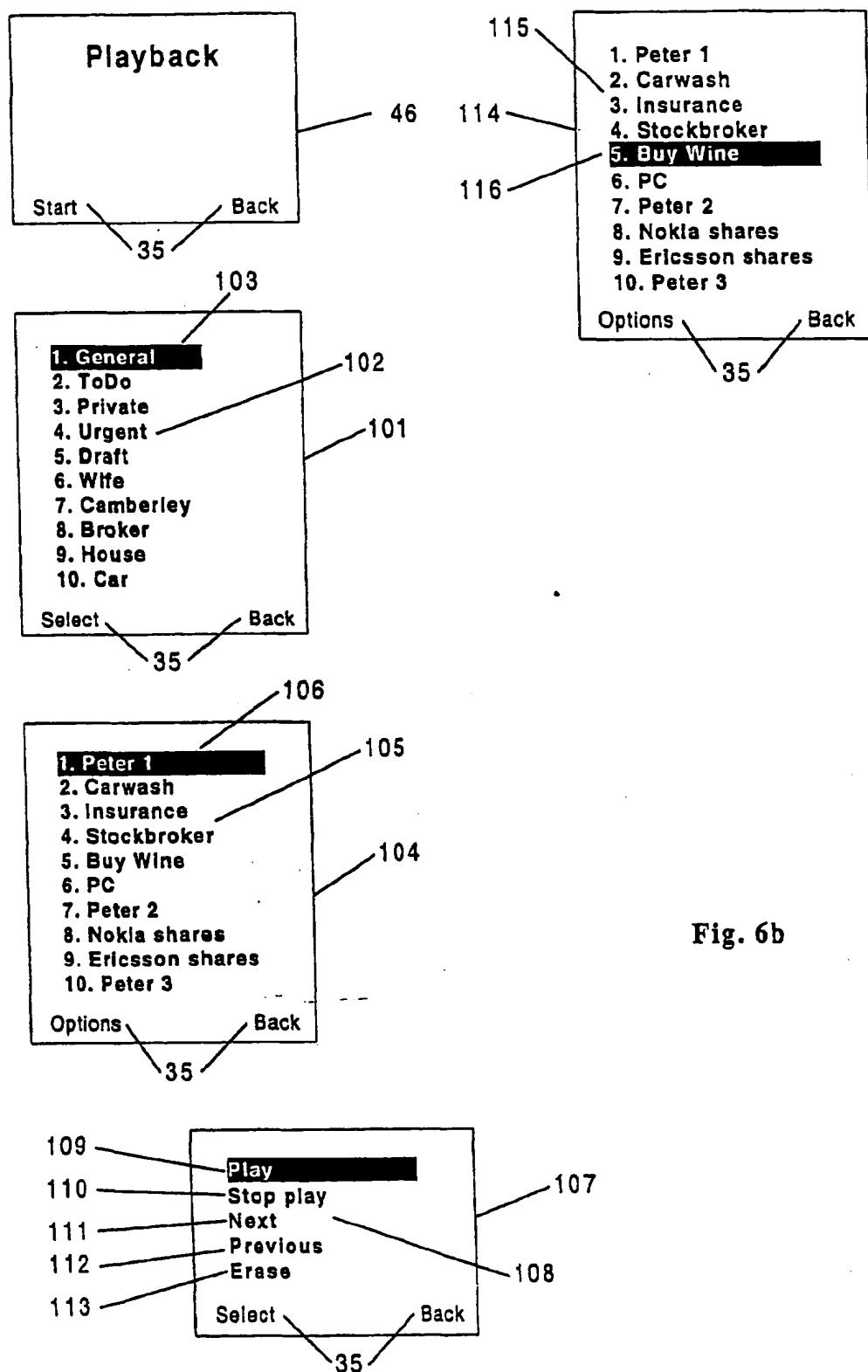


Fig. 6b

Settings

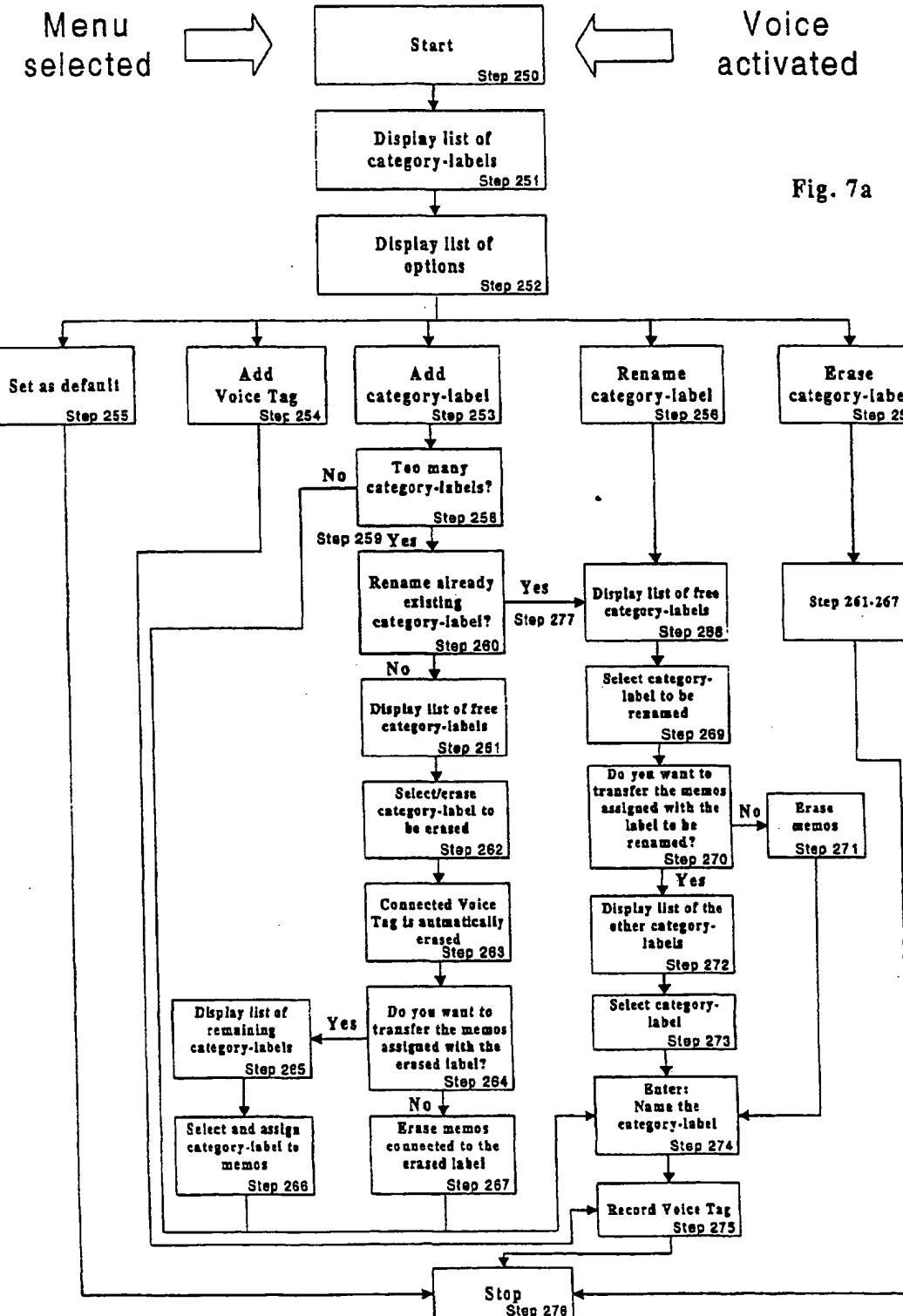


Fig. 7a

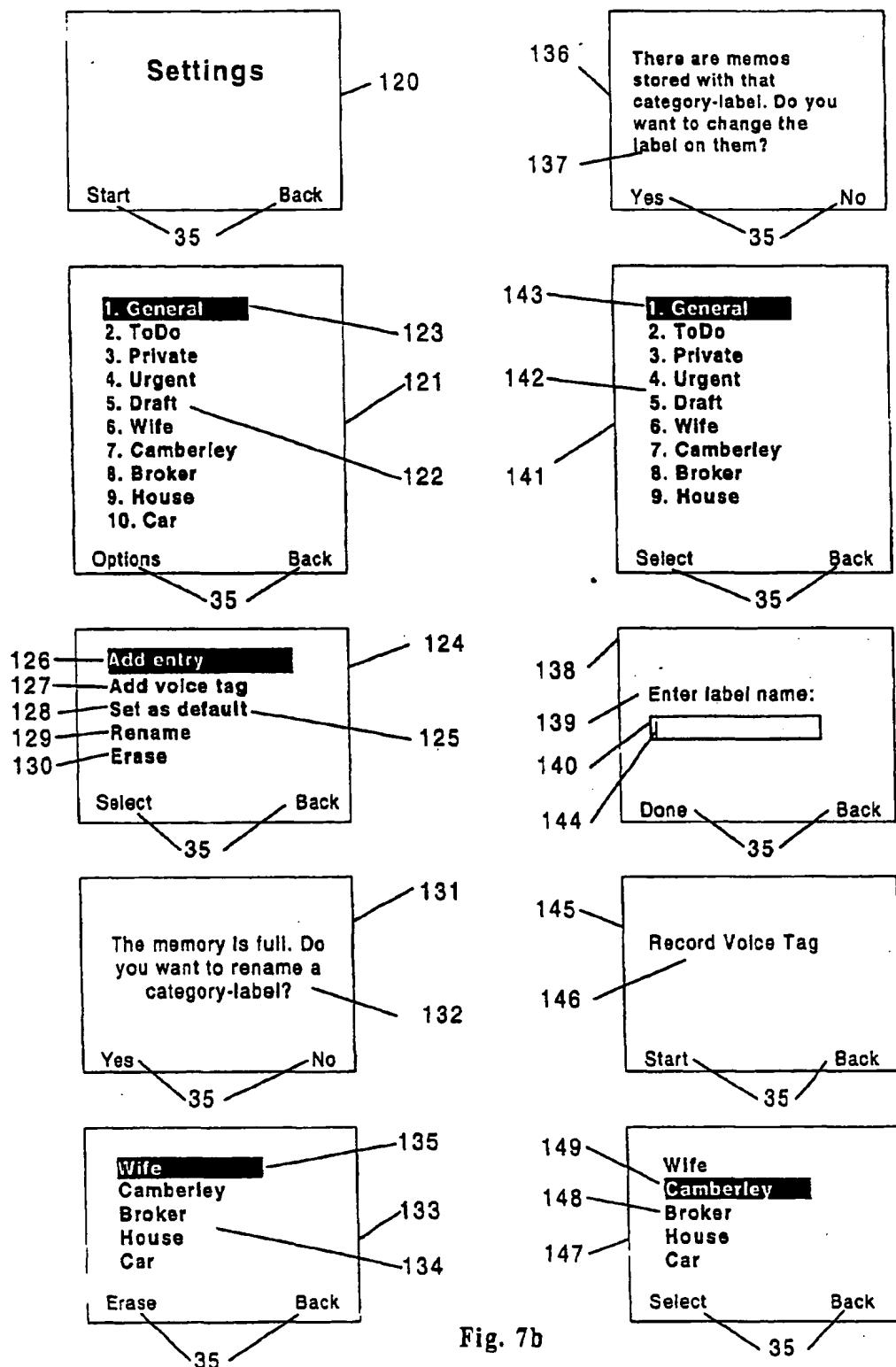


Fig. 7b

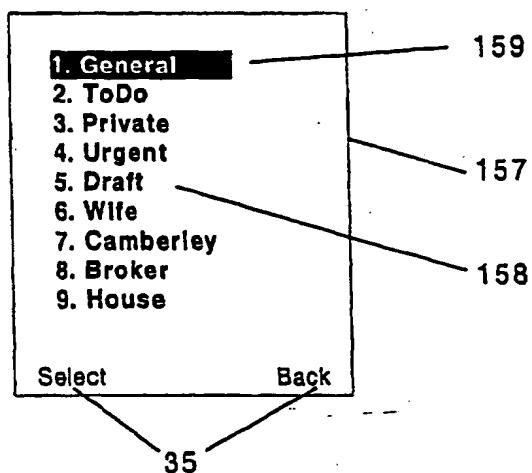
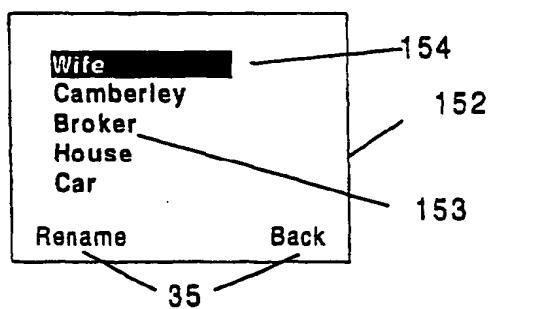


Fig. 7c

Memo	General				
Number	Date	Length	Name	Priority	Location
42	10/11/99	0:28	Work	1	Pointer to RAM
23	08/11/99	0:15	Meeting	1	Pointer to RAM
28	10/11/99	0:18	Seminar	2	Pointer to RAM
45	11/11/99	0:55	Secretary	2	Pointer to RAM
46	11/11/99	0:10	Kids	3	Pointer to RAM
52	13/11/99	0:15	Wine	3	Pointer to RAM
48	12/11/99	1:12	Buy	4	Pointer to RAM
49	12/11/99	0:13	Wine	5	Pointer to RAM
50	12/11/99	0:32	Phone	5	Pointer to RAM

Memo	General				
Number	Date	Length	Name	Priority	Location
23	08/11/99	0:15	Meeting	1	Pointer to RAM
42	10/11/99	0:28	Work	1	Pointer to RAM
28	10/11/99	0:18	Seminar	2	Pointer to RAM
45	11/11/99	0:55	Secretary	2	Pointer to RAM
46	11/11/99	0:10	Kids	3	Pointer to RAM
48	12/11/99	1:12	Buy	3	Pointer to RAM
49	12/11/99	0:13	Wine	4	Pointer to RAM
50	12/11/99	0:32	Phone	5	Pointer to RAM
52	13/11/99	0:15	Wine	5	Pointer to RAM

Fig. 8